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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,263	10/09/2003	Aziz Hassan	BSN7	8238
20238 7590 11/27/2007 THE LAW OFFICES OF THOMAS L. ADAMS 120 EAGLE ROCK AVENUE P.O. BOX 340 EAST HANOVER, NJ 07936			EXAMINER MAKI, STEVEN D	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/682,263	<b>Applicant(s)</b> HASSAN ET AL.	
	<b>Examiner</b> Steven D. Maki	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8,9-23,25-32 is/are pending in the application.
- 4a) Of the above claim(s) 1-8,22,23 and 25-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2) **Claims 9-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (US 2,198,776) and Sheridan (US 3,677,808) in view of Sleeter (US 6,277,310) and Song (US 6,010,596) and optionally Borsinger et al (US 2006/0289138).**

Borsinger et al (filed 3-17-03) is available as prior art under 35 USC 102(e) because (1) the filing date for claims 9-21 is 10-9-03 and (2) claims 9-21 are not entitled to the benefit of the filing date (10-10-02) of the provisional application 60/417,620. Claims 9-21 are not directed solely to the subject matter described and supported by the provisional application 60/417,620. The subject matter of heating to a temperature between greater than 200 degrees F to approximately 300 degrees F was first introduced in this application 10/682,263 and is not reasonably conveyed by provisional application 60/417,620.

It is well known to incorporate wax in a slurry comprising gypsum and water during manufacture of a *gypsum board* to make the board water resistant as evidenced by King (col. 1 lines 7-18, col. 2 lines 50-55, col. 3 lines 1-12, col. 4 lines 46-72) and Sheridan (col. 1 lines 21-30, example 2). King teaches adding **wax powder** to the slurry or spraying molten wax into the slurry (col. 3 lines 1-12, col. 4 lines 46-72). Sheridan teaches heating wax to 200 degrees F and **spraying the molten wax** on the slurry as the other ingredients are being combined and mixed (example 2). Sheridan suggests *using wax to obtain a water resistant gypsum board or water resistant particle board*. See columns one or two of Sheridan. Both King (col. 1 lines 52-55) and Sheridan (col. 1 lines 41-55) disclose the conventional practice of adding the **water**

**proofing material (wax) in the form of an emulsion.** With respect to heating to a temperature greater than 200 degrees F, King teaches adding wax to a slurry of calcined gypsum and water; mixing the wax, calcined gypsum and water to form a mixture; placing the mixture between paper liners to form a board; cutting to form individual boards; and passing the individual boards through a dryer wherein the board is heated in the dryer to a sufficiently high temperature to melt the wax and cause it to coat the gypsum crystals. King teaches using 0.5 to 15 % by weight wax in the gypsum core. King teaches using paraffin wax or its equivalent such as hydrogenated cocoanut oil (col. 2 lines 17-24). Hence, the state of the art as evidenced by King substantially discloses claimed method of rendering a gypsum product water resistant, except for the specific wax having the specified iodine value of between 0 and approximately 30.

As to claims 9-21, it would have been obvious to one of ordinary skill in the art to use wax such as hydrogenated soybean or hydrogenated palm as the wax in the known gypsum board manufacturing process such that the wax has an iodine value between 0 and 30 and a melting point between 120 and 180 degrees F since (1) King discloses using wax such as hydrogenated cocoanut oil for rendering the gypsum wallboard water resistant and teaches melting the wax during the drying step, (2) Sleeter, directed to the problem of using wax to improve the water resistance of composite boards such as particle boards, recommends using low iodine value wax such as hydrogenated soybean or hydrogenated palm for enhancing water resistance of the board, (3) Sleeter teaches that (a) the low iodine value is 0-70 preferably 0-30, (b) the low iodine wax (saturated triglyceride material) is a totally renewable resource and contributes virtually

no VOCs, and (c) the low iodine value wax may be applied in the form of an emulsion, powder or molten spray and optionally (4) Borsinger et al suggests using low iodine wax comprising triglyceride in a gypsum board in order to improve water resistance (paragraph 17). With respect to Sleeter's teaching to use the low iodine value wax (soybean wax or palm wax) to improve water resistance for boards such as particle boards, it is noted again that Sheridan suggests using wax for obtaining water resistant particle boards or water resistant gypsum boards.

Applicant argues King teaches away from the claimed invention. Examiner disagrees because King teaches toward incorporating wax in the gypsum slurry used to manufacture a gypsum board.

Applicant argues that King teaches away from using emulsions. This argument is not persuasive. First: The claimed invention is directed to adding the wax to the slurry either as a dried powder or in the form of an emulsion. See specification page 24 lines 4-6. Claim 10 covers the powder embodiment. King teaches toward the powder embodiment (e.g. claim 10) because King discloses adding wax in powder form to the slurry. See col. 3 lines 1-12 and claim 7 of King. Second: It is acknowledged that King prefers to add wax in powder form or spray molten wax. However, King teaches that it is customary to add waterproofing materials in the form of an emulsion if they are of an oily, waxy or a fatty nature. See col. 1 lines 52-55. King's discussion at col. 2 lines 2-8 is directed to asphalt instead of wax. The "... case law does not require that a particular combination must be the preferred, or most desirable, combination described in the prior art in order to provide motivation for the current invention." In re Fulton 73 USPQ

1141, 1145 (Fed. Cir. 2004). King's disclosure of the customary use of emulsions to waterproof gypsum boards teaches toward the claimed emulsion embodiment (e.g. claim 16).

Applicant argues that Sheridan teaches away from using emulsions. This argument is not persuasive. It is acknowledged that Sheridan prefers steam atomizing wax and directing the resultant spray onto the surface of the slurry. However, Sheridan states "... emulsions are usually more economical in the long run because of the increased waterproofing efficiency. The use of such emulsions enjoys wide-spread acceptance in ... the gypsum board industry." (col. 1 lines 46-51). The "... case law does not require that a particular combination must be the preferred, or most desirable, combination described in the prior art in order to provide motivation for the current invention." In re Fulton 73 USPQ 1141, 1145 (Fed. Cir. 2004). Sheridan's disclosure of widespread use of emulsions for increased waterproofing efficiency in the gypsum board industry teaches toward the claimed emulsion embodiment (e.g claim 16).

With respect to Sleeter, applicant argues that it is mere speculation to assume that an agent that is effective on a wood based substrate would show similar behavior with a different substrate such as gypsum. This argument is not persuasive because (1) King and Sleeter teach using hydrogenated oil (wax) and therefore teach substantially similar waterproofing agents and (2) Sheridan teaches obtaining water resistance by incorporating wax in particle boards or gypsum boards. Contrary to applicant's arguments, the applied prior art provides a reasonable expectation of success for using

the wax (hydrogenated oil) disclosed by Sleeter as the wax used in the known gypsum board manufacturing process.

Applicant argues that Borsinger et al is an improper references under 102(e). Applicant asserts that the present application 10/682,263 (filed 10-8-03) is supported by the provisional application filed 10-10-02. Applicant also comments that US 2006/0289138 to Borsinger et al shares a common assignee with the present application 10/682,263. Examiner disagrees that US 2006/0289138 to Borsinger et al is not available as prior art under 35 USC 102(e). The filing date (3-17-03) of US 2006/0289138 to Borsinger et al is before the filing date (10-09-03) of this application 10/682,263. The inventive entity (Gregory G. Borsinger and Abbas Hassan) of 2006/0289138 to Borsinger et al is different than the inventive entity (Aziz Hassan and Gregory Borsinger) of this application 10/682,263. Contrary to applicant's arguments, this application is not supported by the provisional application 60/417,620 filed 10-10-02 because example 1 in the provisional application fails to show possession of the entire specific range of "greater than 200 degrees F to approximately 300 degrees F". Applicant has presented no convincing argument and/or evidence showing why "approximately 300 degrees F" was contemplated as the upper limit for the temperature range for the heating step in the provisional application 60/417,620. With respect to 103(c), 2006/0289138 to Borsinger et al has not been excluded as 102(e) type prior art, because the required evidence has not been presented. Applicant has not stated that the application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person. Borsinger et al continues

to remain available as prior art for suggesting using low iodine wax comprising triglyceride in a gypsum board in order to improve water resistance (paragraph 17).

As to the temperature range of 200-300 degrees F, it would have been obvious to one of ordinary skill in the art to heat the gypsum board at a temperature between "greater than 200 degree F to approximately 300 degrees F" to melt the wax and dry the gypsum board since (1) King teaches heating the gypsum board to a sufficiently high temperature to melt the wax and dry the board such that the gypsum crystals are coated with the wax and the desired water resistant property is obtained and (2) Song teaches heating a gypsum board such that the core temperature is at least 170 degrees F (e.g. about 200 degrees F) to melt wax in the gypsum core and dry the board (col. 10 lines 26-39). The optimum melting point of the wax and the optimum temperature for melting the wax and drying the board could have been determined without undue experimentation in view the teachings of the applied prior art.

Applicant argues that King fails to teach any specific temperature. More properly, King teaches heating to a "sufficiently high temperature to melt the wax" to obtain the desired result of coating the gypsum crystals so that the board is water resistant. Furthermore, Song's temperature *about* 200 degrees F overlaps the claimed range between "greater than 200 degrees F to approximately 300 degrees F". Moreover, Song's teaching to heat to at least 170 degrees F such as *about* 200 degrees F provides ample suggestion to heat to a temperature within the claimed range of between "greater than 200 degrees F to approximately 300 degrees F".



As to claims 10-15 and 20, it would have been obvious to one of ordinary skill in the art to use the claimed wax solid since (1) King teaches using 0.5 to 15% by weight wax and applying the wax in the form of a powder and (2) Sleeter teaches using soy wax and applying the wax in the form of a powder.

With respect to claims 10-15 and 20, applicant argues and examiner agrees that King teaches melting the wax and then spraying the wax. Examiner adds that King also prefers the alternative embodiment of applying wax as a powder. See col. 3 lines 1-12 and claim 7.

With respect to claims 10-15 and 20, applicant argues that it is mere speculation to assume that an agent that is effective on a wood based substrate would show similar behavior with a different substrate such as gypsum. This argument is not persuasive because (1) King and Sleeter teach using hydrogenated oil (wax) and therefore teach substantially similar waterproofing agents and (2) Sheridan teaches obtaining water resistance by incorporating wax in particle boards or gypsum boards. Contrary to applicant's arguments, the applied prior art provides a reasonable expectation of success for using the wax (hydrogenated oil) disclosed by Sleeter as the wax used in the known gypsum board manufacturing process.

As to claims 16-19 and 21, it would have been obvious to one of ordinary skill in the art to use the claimed wax emulsion since (1) King and Sheridan teach that it has been previously known to apply wax in the form of an emulsion, (2) King teaches using 0.5 to 15% by weight wax and applying the wax in the form of a powder and (3) Sleeter teaches using soy wax and applying the wax in the form of an emulsion.

Applicant's arguments regarding claims 16-19 and 21 are not persuasive since all of the references to King, Sheridan and Sleeter teach that wax may be applied as an emulsion. The "... case law does not require that a particular combination must be the preferred, or most desirable, combination described in the prior art in order to provide motivation for the current invention." In re Fulton 73 USPQ 1141, 1145 (Fed. Cir. 2004). Sheridan's disclosure of widespread use of emulsions for increased waterproofing efficiency in the gypsum board industry teaches toward the claimed emulsion embodiment.

#### Remarks

- 3) Applicant's arguments filed 9-6-07 have been fully considered but they are not persuasive. Applicant's arguments are addressed above.
- 4) No claim is allowed.
- 5) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

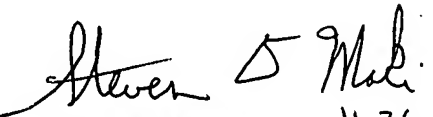
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki  
November 20, 2007

  
**STEVEN D. MAKI**  
**PRIMARY EXAMINER**  
11-26-07